RESPONSE OF SEVERAL THRESHOLD REACTIONS IN REFERENCE FISSION NEUTRON FIELDS*

by

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ABSTRACT

Cross sections for (n,p) reactions on ^{27}Al, $^{46,47,48}Ti$, $^{54,56}Fe$, ^{58}Ni, ^{59}Co, and ^{64}Zn and for ^{238}U fission have been measured in this laboratory relative to fission cross sections for ^{235}U or ^{238}U and the results of this work have been reported. These data have been renormalized to accommodate recent revisions of the ^{235}U and ^{238}U fission evaluated cross sections which are accouned for in the ENDF/B-IV files. The response of the renormalized data to two commonly used reference neutron fields have been investigated: i) pure thermal-neutron fission of ^{235}U, and ii) the spontaneous fission of ^{252}Cf. The results of this analysis and a comparison with corresponding recent information from the literature are discussed in this report. Two additional topics are addressed in appendices: i) the preparation and calibration of uranium deposits used in cross section measurements, and ii) errata in some earlier reports from our laboratory on this same general subject.

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